

Canada

Canadian nuclear industry



Overview

04

nuclear power plants

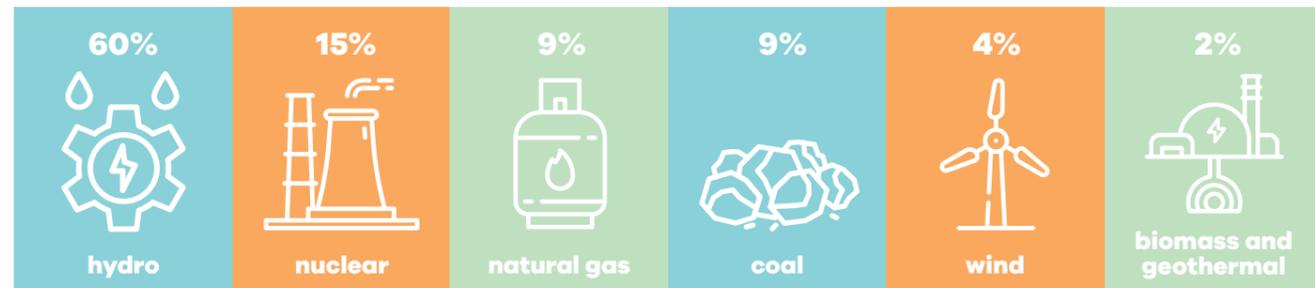
19

reactors in operation

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nuclear reactor under construction

Generation mix



Nuclear facts on Canada

91 Climate change is considered a serious issue by 91 per cent of Canadians

216 Between 2035-2050, SMRs could reduce GHG emissions by 216 megatonnes (Mt) in the heavy industrial sector

14 SMRs could contribute to getting to net zero by reducing GHG emissions by 14 Mt per year on average, the equivalent of taking over 3 million cars off the road per year



Viewpoint

Net zero needs nuclear in Canada and the world

Canada is a Tier 1 nuclear nation, with a full spectrum of capabilities and resources in nuclear technology such as uranium mining, research, power and medical isotopes.

Nuclear is the second largest source of electricity in Canada at 15 per cent of total generation. In Ontario and New Brunswick, nuclear energy represents 60 per cent and 36 per cent of generation, respectively.

Among the largest clean energy projects currently under way in Canada are the multibillion-dollar refurbishments at Ontario's Bruce and Darlington nuclear plants, which will provide the province with clean and affordable electricity into the 2060s and strengthen Canada's nuclear supply chain and ecosystem.

Canada, like other countries, has pledged to phase out coal-fired electricity by 2030, exceed its 2030 Paris Agreement emissions target and to reach net-zero emissions by 2050. But Canada is not going to get to net zero by just cleaning up our electricity system, which is already 82 per cent non-emitting nationally. We have to look to other sectors of our economy.

We're dependent on natural resources extraction and heavy industry and it's in these places we have to look for greenhouse gas (GHG) reductions. Canada's industrial sectors – such as oil sands, chemical manufacturing and mining – currently contribute more than 30 per cent of Canada's greenhouse gas emissions.

We cannot afford to abandon these industries that form the backbone of our economy. For Canada to reach our goal of net-zero emissions by 2050, we must decarbonize heat and power in the industrial sector in an environmentally and economically advantageous way.

SMRs are particularly well-suited to the industrial sector given their ability to generate reliable, carbon-free electricity and heat.

Research conducted by EnviroEconomics and Navius Research and commissioned by the Canadian Nuclear Association (CNA), shows the economic and climate benefits and implications of employing SMRs in Canada's high-emitting industrial sectors. Across all scenarios, SMRs delivered low-cost emission reductions, driving down the cost of getting to net-zero as a nation while contributing significantly to Canada's annual GDP. Between 2035 to 2050, SMRs could reduce GHG emissions in the industrial sector by 216 megatonnes – the equivalent of taking more than three million cars off the road each year in Canada.

With deployments set to begin as early as 2026, SMRs could be widespread by 2035 to meet the rapidly growing demand for emission reductions in the industrial sector.

Canada has an incredible collaboration between the federal and four provincial governments, four provincial utilities and our regulator.

This year, the province of Alberta formally joined Ontario, New Brunswick and Saskatchewan in signing a memorandum of understanding to explore developing and deploying SMRs. And nuclear has been recognized in the federal government's definition of clean energy and its climate and hydrogen plan.

While Canada continues to move positively on nuclear, the global community also has a role to play in recognizing the role nuclear can play as a clean source of energy.

The next COP26 in Glasgow, Scotland, needs a firm commitment by global leaders of a realistic, science-based approach that includes more nuclear power because net zero needs nuclear.

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